

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

November 12, 1861.—Dr. J. E. Gray, V.P., in the Chair.

DESCRIPTION OF A NEW SPECIES OF ELAPOMORPHUS FROM BRAZIL. BY DR. OTHO WUCHERER, CORR. MEMB.

ELAPOMORPHUS SCALARIS.

Eight upper labials, the fourth and fifth touching the eye, the seventh largest. Scales in seventeen rows; 128–130 ventral shields; dirty brick-red above; head brownish, with a black narrow dorsal streak traversed by short black bands; narrow black spots on the sides.

Hab. Cañavieras, Matta de S. João, Bahia.

Description.—The body of moderate length, almost cylindrical; belly flat; the tail short. Head moderate, distinct, with flat crown; the cleft of mouth moderate; rostral shield triangular, almost reaching the surface of the head, recurved, concave, the inferior edge slightly protruding; three frontals, two anterior and one posterior, the former small, almost triangular, very narrow in the antero-posterior direction, the posterior one very large; one nasal pierced by the nostril; nostril large, lateral; superciliary shield small; one anterior, two posterior oculars, the anterior large, high, forming a short suture with the vertical; loreal elongate; vertical moderate, almost triangular; occipitals large, forked behind; one temporal, sometimes two, one behind the other, touching the inferior posterior ocular; upper labial shields eight, the fourth and fifth touching the eye, the seventh largest; eye moderate, sublateral, pupil round; scales rhombic, not truncated, smooth, equal, without any groove, a few in the middle row of the tail larger, in seventeen rows; posterior tooth longest, grooved; two pair of chin-shields. Snout and part of crown brown and bluish iridescent, irregularly speckled with black; lips white; the back is of a dirty brick-colour: a black streak, of the breadth of the middle dorsal row of scales, runs along the body almost to the tip of the tail; this is crossed by short, transverse, black bands, some of which do not correspond exactly in their lateral halves; on the sides a line of narrow, almost linear, black spots; underneath uniform yellowish white.

Dimensions of two specimens :—

Length of head	0·010	0·013
Length of tail	0·040	0·055
Total length	0·320	0·250
Ventral shields	128	34
Subcaudal shields	130	34

The smaller specimen is in the British Museum. The larger specimen was sent to me from Cañavieras. It was injured in the head, and a few characters are not recognizable; the smaller corresponds with it in every particular. I received it from M. C. Gayleard, from the Matta de S. João, a few leagues south from the city of Bahia.

This species differs from others in the shape of its head, which is distinct, in having a shorter body, broader ventral shields, and seventeen rows of scales; but the dentition and coloration are very similar.

NOTICE OF A NEW SPECIES OF PILOT-WHALE (*GLOBIOCEPHALUS*), FROM THE COAST OF DORSETSHIRE. BY DR. J. E. GRAY, F.R.S., V.P.Z.S., ETC.

In 1853 the British Museum received the skull of a Cetacean which was dredged up at Bridport, on the coast of Dorsetshire, from the Rev. John Beecham, of the Wesleyan Mission Board. It is evidently a species of *Globiocephalus*; but on comparing it with the skull of *G. Svineval*, the Common Pilot-Whale, and other species of *Globiocephalus* which have come under my observation, it appears to be quite distinct from them, and, as I believe, of a species that has not before been noticed.

It is evidently the skull of a large animal, being nearly as large as that of the Common Pilot-Whale; but it is at once distinguished from all the other species of that genus by the convexity of the palate and the oblong form of the nose of the skull, which is nearly of the same width for the greater part of the length, and is regularly rounded in front; while in *G. Svineval* it gradually converges from the notch to the apex, and the palate is quite flat, especially in front; and this is the case with all the other species of the genus.

GLOBIOCEPHALUS INCRASSATUS. Thick-palated Pilot-Whale.

Teeth $\frac{9-9}{0}$ or $\frac{10-10}{0}$; the nose of the skull attenuated, the sides nearly parallel, and regularly rounded in front; the palate very convex, especially in the front; the upper surface of the intermaxillaries rugose in front.

Hab. British Seas, Bridport (*Rev. J. Beecham*, 1853).

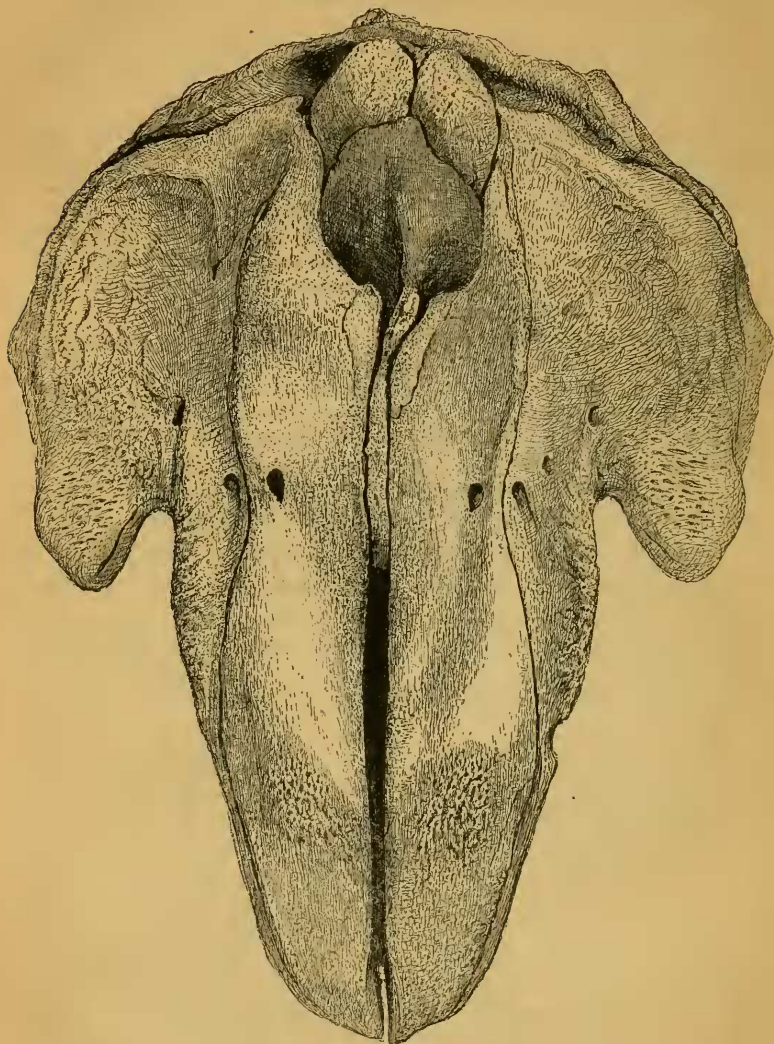
	inches.
Length of the skull.	28
——— of the nose.	14
——— of the teeth	8? imperfect, worn at the end.
Width of nose at the bridge	10
——— of nose at the under .	$9\frac{1}{2}$
——— of skull at orbits. . . .	17

The back of the skull is higher and much narrower than in the skull of *G. Svineval*. (See woodcuts, pp. 320, 321.)

This species does not appear to have been observed before as British, and I do not find any indication of its having been described as an exotic species. But it is so distinct both in the form of the nose of the skull, in the width of the intermaxillary bones, and more especially in the thickness and convexity of the palate of the front part of the skull, from the species that has hitherto been described, and the differences are so visible, that Mr. Edward Gerrard selected it as a distinct species as soon as he saw it.

It has been suggested that this may perhaps be the other sex of the common Pilot-Whale (*Globiocephalus Svineval*); but I can

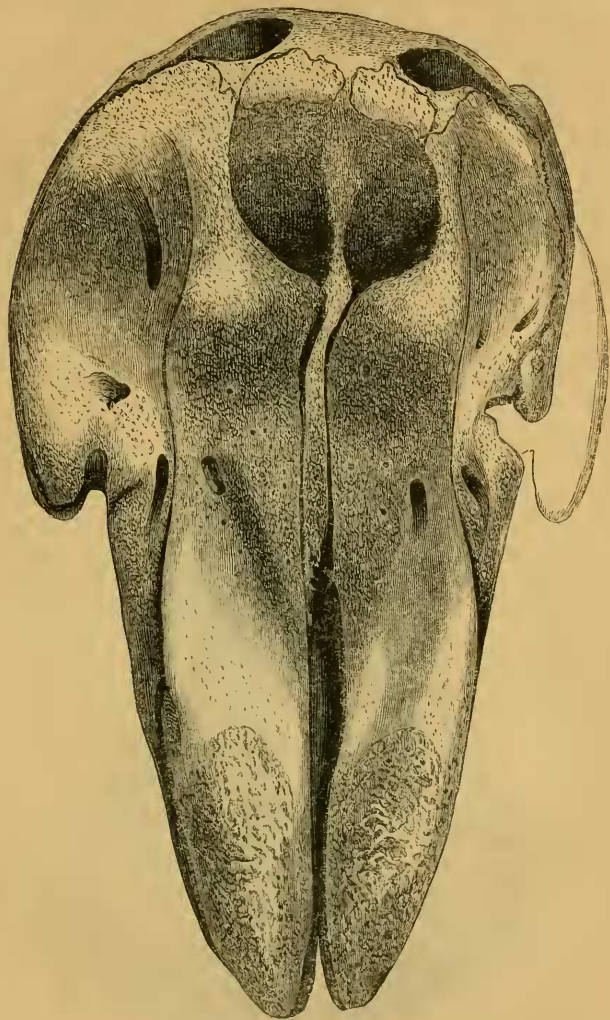
scarcely think this probable, as I have seen many skulls of the latter, and they have been all nearly similar and very unlike the one under



Upper surface of the skull of *Globiocephalus Svineval*.

consideration; and I can scarcely believe that all I have seen could have been of the same sex, for it is a Whale that comes on the coast in great shoals, and hence one of its names is the “Social Whale,” and

specimens of both sexes have been recorded as caught on the British coast. At the present moment there is an inclination to regard some of the Whales which have been considered species as mere sexes of



Upper surface of the skull of *Globiocephalus incrassatus*.

the same species, simply because the specimen described in one case happens to be a male and in the other a female. Thus *Delphinus micropterus* is said to be the female of *Ziphius Sowerbiensis*, for the

above reason ; but I have not heard that any new specimen has been discovered, or any fact eliminated, to prove the truth of this suggestion, and it may be only an instance of accidental coincidence—

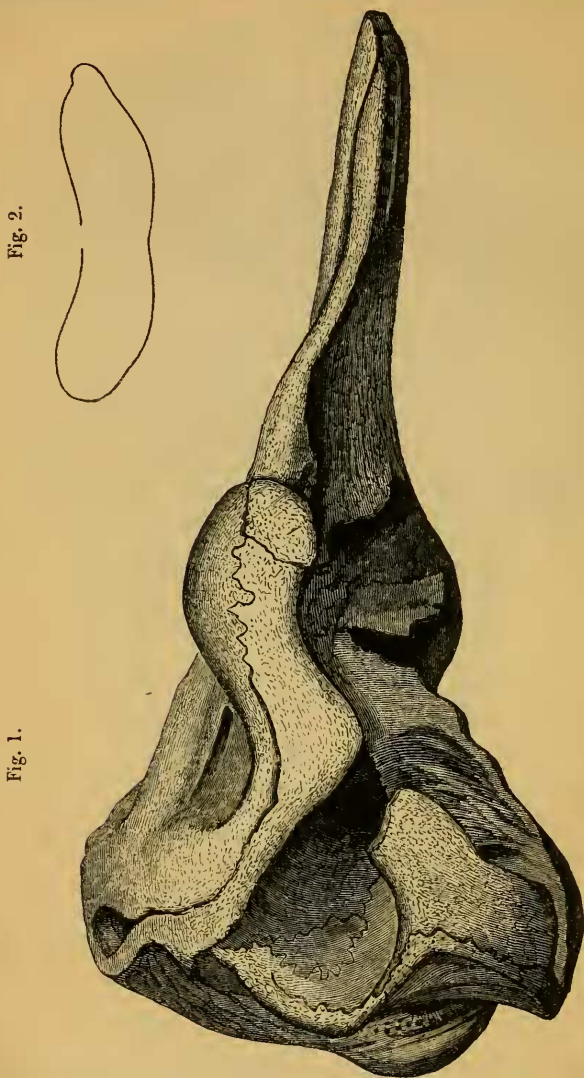


Fig. 1.

Fig. 2.

Fig. 1. Side view of skull of *Globiocephalus incrassatus*.

Fig. 2. Diagram of the cross-section of the palate of *G. incrassatus*.

such a case as may be disproved by the next discovery of either animal.

In the same manner Professor Eschricht, of Copenhagen (and no one has studied the Whales of the North Sea with greater earnestness and success), regards *Hyperoodon latifrons* as the male of the old well-known *Hyperoodon rostratum*, because his example of the former belongs to a male, and that of the latter to a female specimen; and he exhibits them side by side as sexes of the same animal in his Museum (see Ann. and Mag. Nat. Hist. 1852, ix. p. 281). Now this is an evident mistake, arising from mistaking an accidental coincidence for an established fact.

The specimen from which the skeleton of *Hyperoodon latifrons* was derived, that is in the Museum of the College of Surgeons in Edinburgh, was a *female*, which was taken on the 24th of October, 1839, accompanied by a young male, in the Frith of Forth. Therefore there are female as well as male specimens known of *Hyperoodon latifrons*, which is regarded by Professor Eschricht as the male of the more common *H. rostratum*, of which I have also seen males as well as females, as recorded in my paper on this subject in the 'Proceedings' of the Society for November 1860.

ON A LARGE SPECIES OF TEREDO, SUPPOSED TO BE THE
ANIMAL OF THE GENUS FURCELLA, LAMK. BY DR. J. E.
GRAY, F.R.S., V.P.Z.S., F.L.S., ETC.

In a former communication to the Society on the genus *Furcella*, I came to the conclusion that the animal of that genus was destitute of any shelly valves, because on examining the tube of a young specimen in a very perfect state, containing in its cavity the two palettes of the animal, it had no appearance of valves, which I supposed would be of too large a size to have escaped out of the tube, more especially as the palettes were in it, which were of a much smaller size and more slender character than the valves were likely to be, and the tube had all the appearance of the animal which formed it having been eaten out by the larvæ of *Muscidæ*, as the skins of the larvæ and pupa-cases were found in the tube with the palettes.

But this shows the danger of coming to any conclusion without having the actual specimen before one; for we have lately received from Mr. Jamrach, along with a number of Fishes, Reptiles, and other animals in spirits, chiefly from the Dutch Colonies of the Indian Ocean, two specimens of a large species of true typical *Teredines* in spirit, without their shelly tube, but with their palettes attached, which seem to be very probably the animal of the genus *Furcella*.

The reason why I believe them to be the animal of that genus is, first, their large size, which is quite sufficient to form a tube as large as the younger specimen of the genus *Furcella*, and, secondly, the form and size of the palettes, which agree in general character with those which were found in the tube of *Furcella*, and which are figured in the 'Proceedings' of the Society for 1857, p. 243, Mollusca, pl. xxxix. f. 3. Yet there is just that amount of difference

between the palettes of these animals and those found in the young specimen of *Furcella* which prevents one from saying that the animal is absolutely the animal of the *Furcella*.

The palettes of *Furcella* were slender, cylindrical, with a dilated tip like a double-headed hammer, like the young palette of *Teredo malleolum* of Turton, but of a much larger size; and they had a small, slightly-raised tubercle on the middle of the inner side of the dilated end.

The palette in the two specimens of *Teredo* which we have lately received is of precisely the same form, and nearly of the same size; but instead of having this small tubercle, the middle of the dilated end is produced into an elongated process about half an inch long, which is more slender and oblong at the base, thicker, flattened, and dilated above, and truncated at the top.

The valves of the shell are exactly like those of the *Teredo navalis*, *T. norvegicus*, and other normal species of the genus, but larger.

I am inclined to name this species *Teredo furcelloides*; for I do not think it would be safe to decide, without further evidence, that it is the animal of *Furcella*, Lamk.; but at the same time I consider it right to bring the occurrence of this animal at once before the Society, as it has led me to doubt if my conclusion was correct that *Furcella* is a genus of Conchiferous Mollusks without any valves, as I was inclined to believe before the animal occurred, and which the evidence then before me led me to believe was a correct conclusion.

The palettes are situated at the hinder end, just within the edge of the mantle, the siphons being quite distinct from or within their base. The siphons are slender, of nearly equal diameter, and united nearly to their tips; in their contracted state they just reach to the dilated part of the palette at the base of the terminal elongated process. There are some fragments of a thin lamina of shell attached to the hinder end of the mantle near the base of the palettes.

If this should prove to be the animal of *Furcella*, or even of a *Furcella*-like *Teredo*, it shows most conclusively that the cup at the end of the tubes cannot be regarded as the analogue of the true valves of the genus, as I have also proved in a former paper (see Proc. Zool. Soc. 1858, p. 258).

If these animals prove to belong to the genus *Furcella*, as I suspect they may, then that genus or group of species will only be separated from the other *Teredines* by the habit of living in sand, by the club-shaped form of the tube closed at the end with two arched plates, the division and separate prolongation of the tubes of the siphonal aperture, and the hammer-like form of the palettes.

Nov. 26, 1861.—Dr. J. E. Gray, V.P., in the Chair.

NOTES ON THE BREEDING AND REARING OF THE CHINESE CRANE (*GRUS MONTIGNESIA*) IN THE SOCIETY'S GARDENS.

By A. D. BARTLETT.

Near the middle of May a pair of these birds formed a rude nest of dry rushes on the ground; and soon afterwards two eggs were laid. The parent birds took turns upon these eggs during the time of in-

incubation. On the 24th of June a young Crane was hatched, the period of incubation having been thirty days.

The young bird was well covered with down of a light-brown or fawn colour, with darker markings on the back ; it was short on its legs, and the bill also appeared short ; in fact, it appeared less like a Crane than I expected to see it. It was able to walk about as soon as it was hatched, but appeared feeble, and now and then fell or rolled over in its attempts to follow its parents.

The old birds attended to the young one with much care, and furiously attacked everything that came near the place ; they collected worms and beetles, &c., from all parts of their enclosure, which they brought in their bills towards the young bird, and after mutilating all living food, they would hold it near the young bird, who would advance and pick it from their bills, or from the ground as soon as it was dropped by them. The young Crane never opens its mouth and cries for food like the Storks or Herons and many other young birds, but utters a rather loud note, like *peep, peep, peep*, not unlike the chick of a common fowl ; it is not, however, as adroit and able to obtain its food as the young of the Gallinaceous birds generally are ; and consequently the parent birds are far more attentive, and watch every opportunity of obtaining food and preparing it for the young one. I have frequently seen the old birds offer a piece of biscuit (that the young bird found was too large to swallow), and they then would place it upon the ground, and by repeated blows break it up in small pieces, and then drop these close to the young bird, who would pick them up and swallow them. From these observations I am induced to consider that the Cranes (*Grus*) occupy an intermediate position between those birds that feed their young like the Herons and Storks, and those groups, like the Bustards and Plovers, whose young are at once able to run about and seek their food.

Perhaps the most remarkable thing is the rapid growth of the young Crane, which is very surprising. As I have before stated, at first the legs are short ; in fact, as compared with the parents, the bird is remarkably small, and few persons would guess what it possibly could be ; in a few days, however, the legs begin to grow rapidly, and the neck and bill become elongated, and the bird quickly appears a Crane in shape.

From the time of hatching, the female alone broods upon or nestles the bird, although the male takes turn in the task of incubation ; and I notice the female does not squat down on the young one to brood, but sits down on the ground near it, and the young bird immediately walks behind her ; she then raises her long black plumes, between which he creeps, and passes forward under one of her wings, until quite out of sight ; her plumes are then lowered into their ordinary position.

There is a beautiful example of the progressive growth from the first down to the perfect feathers to be seen on the young of this bird. I have in many birds observed this, but not to so great an extent. It appears that the first down is not thrown off, but continues to grow longer, until the perfect feather is developed having the early down

attached at its point: this condition is to be seen not only on the points of the primaries, but also on the ends of the feathers of the entire plumage. Thus the bird for some time carries his early dress on the outside of his second plumage. The rapid growth of the plumage can be best understood from the fact that on the 27th of September it was found necessary to catch the young bird in order to cut the primaries of one of its wings (which I exhibit), to prevent its flying away. The bird by this time almost equalled its parents in size, and is now assuming the colour of the adult.

ON A COLLECTION OF FISHES SENT BY CAPT. DOW FROM THE
PACIFIC COAST OF CENTRAL AMERICA. BY DR. ALBERT
GÜNTHER.

A small collection of Fishes transmitted to the Society by its Corresponding Member, Capt. Dow, from the Pacific coast of Central America, has proved to be one of great interest, not only because it contains an unusually large proportion of new species, but also because it illustrates a very strange fact with regard to the geographical distribution of the class of Fishes. Several instances of one and the same species occurring on both the Atlantic and Pacific sides of Central America have been known to me for several years. Nevertheless when Mr. Fraser sent home his last collection, made on the Pacific side of the isthmus, and when I found several West Indian species of fishes in it, I was much surprised, and rather inclined to assume that accidentally some confusion had taken place. Every doubt, however, is removed by this last arrival, of Capt. Dow's collection, containing five species out of fourteen which are identical with Atlantic forms, namely:—*Batrachus surinamensis*, *Salarias atlanticus*, *Clinus Delalandii*, *Mugil proboscideus*, and *Fistularia tabaccaria*. It is, however, worthy of remark, that nearly all the species belong to genera living near the coast, and freely entering fresh waters.

The ichthyic fauna of the western coasts of America, between 8° north and 8° south of the Tropic of Cancer, offers a remarkable assemblage of types which belong to very different geographical regions,—representatives of the faunas of North-west America, of the Pacific coasts of South America, of Japan, and of the Sandwich Islands, and of the Atlantic being mixed with a great number of forms peculiar to the area mentioned.

We give, first, a list of the species contained in Capt. Dow's collection:—

1. *Apogon Dovi*, n. sp.
2. *Gobius paradoxus*, n. sp.
3. — *seminudus*, n. sp.
4. *Euctenogobius sagittula*, n. sp.
5. *Batrachus surinamensis*, Bl. Schn.
6. *Blennius brevipinnis*, n. sp.
7. *Salarias atlanticus*, C. & V. var. (see Gthr. Acanth. iii. p. 243).
8. *Clinus Delalandii*, C. & V.

9. — *macrocephalus*, n. sp.
10. *Auchenopterus monophthalmus*, n. sp.
11. *Mugil proboscideus*, n. sp.
12. *Myxus harengus*, n. sp.
13. *Fistularia tabaccaria*, L.

14. *Halichæres*, sp.—The species appears to be new; but the single specimen sent is in too bad a condition to admit of a description.

With the exception of the first species, the others are included in my 'Catalogue of Acanthopterygian Fishes,' vol. iii., for which the following accounts have been prepared.

APOGON DOVII.

D. 6 | $\frac{1}{9}$. A. $\frac{2}{8}$. L. lat. 25. L. transv. $\frac{3}{9}$.

A roundish black spot on each side of the root of the caudal; the spinous dorsal colourless, transparent; uniform olive (in spirits). Head densely punctulated with brown. Only the hind margin of the posterior præopercular ridge is serrated. Dorsal fins nearly equal in height.

The height of the body is one-third of the total length (without caudal), the length of the head two-fifths; eye large, its diameter being more than one-third of the length of the head. Palatine and vomerine teeth present. The upper jaw overlaps slightly the lower; maxillary extending backwards to below the posterior third of the orbit. Operculum with an upper flexible point, and with a lower stiff spine. The third dorsal spine is a little longer than the second, one-half of the length of the head. Caudal fin slightly emarginate, with the angles rounded.

Total length 26 lines.

This species is so closely allied to *A. inermis*, from the Mediterranean, that perhaps it would be better not to separate it; the only difference which we can find is the form of the soft dorsal fin, which is considerably higher than the spinous in the Mediterranean species.

GوبيUS PARADOXUS.

D. 6 | 11. A. 9. L. lat. 14.

The head and the trunk are entirely naked to between the second dorsal and the anal, the remainder is covered by ctenoid scales of moderate size; there are nine or ten of them in one of the anterior transverse series. The height of the body is contained five times and two-thirds in the total length, the length of the head four times and a quarter. Head nearly as broad as high, its width being rather more than one-half of its length. Eyes rather close together, of moderate size. Snout obtuse, rounded, as long as the eye; cleft of the mouth slightly oblique, with the jaws equal in length, and with the maxillary extending to below the middle of the eye. Teeth in villiform bands; there are two curved canine teeth on each side of the lower jaw. The first dorsal spine is elongate, filiform, sometimes extending to the base of the caudal; caudal rounded, shorter than the head; none of the pectoral rays silk-like; the ventral terminates at a great

distance from the vent. Blackish (in spirits), caudal and ventral fins black ; the dorsal filament whitish.

Gobius seminudus.

D. 6 | 15. A. 10.

Head and anterior portion of the trunk naked ; sides with exceedingly small scales, becoming somewhat larger posteriorly. The height of the body is one-sixth of the total length, the length of the head one-fourth. Head with the cheeks swollen, depressed, broader than high, its width being two-thirds of its length. Eyes close together, directed upwards, of moderate size ; snout obtuse, as long as the eye ; cleft of the mouth slightly oblique, with the jaws equal anteriorly, and with the maxillary extending to below the middle of the eye. Teeth in villiform bands, the anterior of the lower jaw slightly enlarged ; there are two small curved canine teeth on each side of the lower jaw. Dorsal fins rather low, the hind part of the spinous dorsal being scarcely lower than the anterior ; caudal rounded, as long as the pectoral ; none of the pectoral rays silk-like ; ventral rather short, terminating at a great distance from the vent. Blackish, fins and sides of the head dotted with black ; ventrals black.

The largest of the specimens examined is two inches long. The species has such peculiar characters that it will be readily recognized. It has no natural affinity to the other small-scaled Gobies, which generally have an elongate form.

Euctenogobius sagittula.

D. 6 | 13. A. 14. L. lat. 58.

Twenty longitudinal series of scales between the dorsal fin and the anus, twelve between the anterior portion of the second dorsal and the anal. The height of the body is one-eighth of the total length, the length of the head five times and two-thirds. The head is as high as broad, its width being somewhat more than one-half of its length. Eyes very close together. Snout obtuse, shorter than the eye, the diameter of which is one-fourth of the length of the head. Cleft of the mouth slightly oblique, with the jaws equal anteriorly, and with the maxillary not extending to below the centre of the eye. Head naked ; scales on the nape and behind the axil very small, becoming larger posteriorly. The second dorsal spine is the longest, somewhat lower than the body underneath, but higher than the soft dorsal ; caudal rather elongate and pointed, two-ninths of the total length. Pectoral shorter than the head ; the ventral terminates at a great distance from the vent. Light greenish olive with a series of four brown spots along the middle of the tail ; sides of the head with some irregular blackish-violet blotches ; dorsal, caudal, and pectoral fins dotted with black, ventral and anal immaculate.

This species has a second series of very small teeth within the maxillary front series ; these internal teeth do not appear to be fully developed, but destined to replace those in function. The teeth of the lower jaw form a very narrow band anteriorly, and stand in a single series posteriorly.

BLENNIUS BREVIPINNIS.

D. $\frac{11}{12}$. A. 15-16.

The height of the body is nearly equal to the length of the head, and contained four times and a half in the total. The snout is obtuse, with the upper profile very oblique. Jaws without a curved tooth. Orbital tentacle slender, fringed at the base. The dorsal fin commences in the vertical from the operculum, is deeply notched, and not continuous with the caudal. The pectoral is longer than the ventral, and extends on to the vent. Greyish-brown (in spirits), with a darker lateral band.

Total length	lines. 18 or 23
Height of the body	4 or 5

CLINUS MACROCEPHALUS.

D. $\frac{22}{12}$. A. $\frac{2}{24}$. C. 13. P. 13. V. $1\frac{1}{3}$.

The height of the body is contained seven times and a half in the total length, the length of the head five times. The head is depressed, rather short, nearly as broad as long; crown of the head broad and flat; interorbital space concave, narrower than the orbit. Snout very short, obtuse, rounded; the maxillary does not extend to behind the posterior margin of the orbit; lips thick. The teeth in the jaws form a band with an outer series of stronger ones; vomerine teeth in a narrow band; palatine teeth none. No orbital tentacles; those at the nostril and on the neck very small. Gill-openings wide, the gill-membranes being united at the throat. Head naked; scales on the body not very small, cycloid. The dorsal fin commences at the occiput, and terminates near the base of the caudal: the spines are flexible, and much lower than the soft rays; the three anterior ones are rather more remote from one another than the following: none of the rays of this or of the other fins are branched. Caudal rounded. The anal is higher posteriorly than anteriorly, about as high as the spinous dorsal. Pectoral rounded, with the middle rays longest, shorter than the head. Ventrals jugular, half as long as the pectoral, with the spine and the outer ray enveloped in a common thick membrane. Dark greyish olive; head and fins blackish; head, base of the pectoral, anterior part of the body, and dorsal dotted with white.

Total length	lines. 61
Height of the body	8
Length of the head	12
Greatest width of the head	11
Depth of the head	$7\frac{1}{2}$
Length of the caudal fin	10
— of the pectoral fin	$10\frac{1}{2}$

CREMNOBATES (BLENNIIDÆ).

(Substituted for *Auchenopterus*, which is preoccupied.)

Body moderately elongate, with the scales small or of moderate

size. Snout rather short, with the cleft of the mouth of moderate width. A band of small teeth in the jaws; teeth on the vomer. Two separate dorsals, composed of spines only; the anterior short, formed by three spines. Ventrals jugular, composed of three rays. Head with tentacles; gill-opening wide.

CREMNOBATES MONOPHTHALMUS.

D. 3 | 27. A. $\frac{2}{19}$. V. 3. L. lat. 38.

A fimbriated superciliary tentacle; a small one at the nostril and on each side of the nape, both multifid. A black ocellus, edged with white, on the posterior quarter of the dorsal fin.

Description.—This fish is very similar to *Cristiceps argentatus* in general habit, but may be readily distinguished by the dorsal fin, which is entirely composed of spines. Head and body are oblong and compressed; the length of the former is one-fourth of the total, the height of the latter one-sixth. The cleft of the mouth is of moderate width, with the lower jaw slightly prominent, and with the maxillary extending beyond the vertical from the centre of the orbit. The teeth in the outer series are stronger than those in the narrow band behind; vomerine teeth apparently in a single series; palatine teeth none. The orbital tentacle is shorter than the eye, with three or four cilia; the nasal and nuchal tentacles are still shorter. The pectoral is nearly as long as the head, rounded, with the middle rays longest; ventral slender, somewhat shorter than the pectoral, with the outer ray longest. The first dorsal fin commences in the vertical from the præopercular margin; the two anterior spines are a little higher than the second dorsal, and flexible; the membrane behind the third spine extends backwards to the base of the second fin. All the spines of the second fin are stiff and pungent, of nearly equal length, the anterior ones being a little shorter; the membrane of the last spine terminates immediately before the base of the caudal, leaving that fin quite free. Caudal rounded, one-seventh of the total length. The anal commences below the seventh spine of the posterior dorsal, and terminates before the caudal; it has two spines anteriorly. The scales are of moderate size; the lateral line runs closely along the dorsal profile, is bent downwards behind the pectoral, and proceeds along the middle of the tail to the caudal.

Brownish, irregularly marbled with darker; anterior dorsal blackish; a black ocellus, edged with white, on the nineteenth and twentieth spines of the posterior dorsal.

Total length 2 inches.

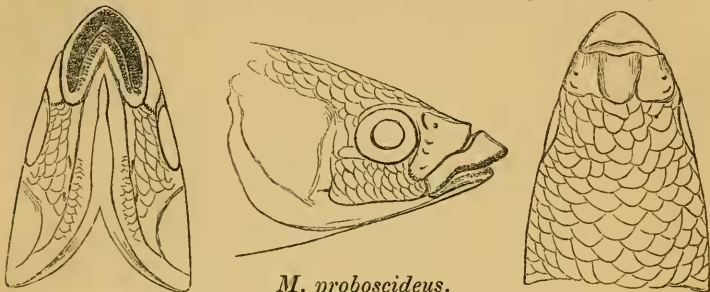
MUGIL PROBOSCIDEUS.

D. 4 | $\frac{1}{8}$. A. $\frac{3}{10}$. L. lat. 38. L. transv. 14.

The front part of the upper lip is extremely thick, conically produced; the lower parts of both lips with a band of soft pavement-like papillæ, arranged in oblique series. Cleft of the mouth deeper than broad.

Description.—This species is naturally more closely allied to *Agonostoma plicatile* than to *Mugil*, but differs from it in having no

teeth at all in the jaws, except that in one specimen the band of papillæ passes into a series of fine moveable teeth anteriorly in the upper jaw. The head and especially the body and tail are compressed; the greatest depth of the body nearly equals the length of the head, and is contained four times and a half in the total length. The upper anterior profile is nearly straight, obliquely descending. The interorbital space is convex, one-half of the length of the head, and scaly, whilst the parts before the orbits are naked. The anterior portion of the upper lip is extremely thick, conically protruding, and nearly as long as the remainder of the snout. A narrow band of soft papillæ occupies the lower parts of the lips anteriorly and



M. proboscideus.

laterally; the papillæ are arranged in oblique series, having a pavement-like appearance. The lower jaws are rather narrow, and the cleft of the mouth is much longer than broad. The maxillary is entirely hidden by the præorbital, which has the extremity truncated and minutely serrated. The eye is much shorter than the snout, and in the present specimen, which apparently is a young one, one-fourth of the length of the head. There are twenty-three scales between the snout and the spinous dorsal fin. The latter commences somewhat nearer to the base of the caudal than to the end of the snout: the soft dorsal and the anal have series of small scales between the rays; the former is higher than the spinous dorsal, and commences above the middle of the anal fin. Caudal emarginate; the anal is rather higher than long, as high as the soft dorsal. The pectoral is inserted above the middle of the depth of the body, and its length is four-fifths of that of the head.

Silvery, upper parts greenish; dark stripes along the series of scales.

MYXUS HARENGUS.

D. 4 | $\frac{1}{8}$. A. $\frac{3}{10}$. L. lat. 38.

A single series of small fixed teeth in the upper jaw, none in the lower or on the vomer; lips thin. Præorbital serrated anteriorly and inferiorly. Anterior dorsal spines of moderate length, half as long as the head.

Head and body are compressed, the greatest depth being about one-fifth of the total. The cleft of the mouth is rather broader than deep, and does not extend to the anterior margin of the orbit. Sides and belly bright silvery; back green.